



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,995	10/15/2001	Vernon T. Brady	017750-732	9493

7590 11/02/2005

Frederick G. Michaud, Jr.
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
P.O. Box 1404
Alexandria, VA 22313-1404

EXAMINER

HARVEY, DIONNE

ART UNIT	PAPER NUMBER
----------	--------------

2646

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/975,995

Applicant(s)

BRADY ET AL.

Examiner

Dionne N. Harvey

Art Unit

2646

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 11 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-104 is/are pending in the application.
- 4a) Of the above claim(s) 3-10, 13-18, 20-24, 27, 28, 30-35, 38, 39 and 41-75 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 11, 12, 19, 25, 26, 29, 36, 37, 40 and 76-104 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. This application contains **claims 3-10, 13-18, 20-24, 27,28, 30-35, 38,39, and 41-75**, drawn to an invention nonelected with traverse in reply filed on 11/29/2004 . A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1,19,29 and 40** are rejected under 35 U.S.C. 102(e) as being anticipated by **Boch (US 6,445,926)**.

Regarding claims 1 and 29, shown in **column 4, lines 54-57**, Boch teaches an apparatus for full-duplex wireless communication comprising a transceiver, thereby inherently reading on “comprising: means for performing at least one of modulating and demodulating information signals”;

In **column 2, lines 25-35**, Boch teaches a transceiver device, reading on “means for information transmission/reception”;

and in **column 2, lines 4-37**, teaches that the device uses orthogonal polarizations, reading on “information transmission using a first polarization and for information reception using a second polarization”.

Regarding claim 19, the method of claim 19 is rejected for the same reasons as set forth in the rejection of claims 1 and 29, above.

Regarding claim 40, Boch teaches a transceiver device, thereby inherently teaching both a modulator and a demodulator.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims **2,11,12,25,26,36,37,88,87,92,98,99,101 and 101** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Boch (US 6,445,926)** in view of **McGeehan (US 6,229,992)** and further in view of **Dent (US 5,574,967)**.

Regarding claim 2, Boch inherently teaches modulating means. Boch does not clearly teach a data input means, a data processing means, and a power output means, as claimed.

In **figure 2**, McGeehan teaches a full-duplex radio apparatus having, data input means **17**, and data processing means **16,11,12**. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Bock and McGeehan, thereby providing a transceiver which is capable of adjustably canceling transmission signals in the receive path via sampled signal, see *column 2, lines 49-65 of the McGeehan reference*.

The combined teachings of Boch and McGeehan, fails to expressly teach a wireless communication device provided with power output means.

In **figure 6**, Dent illustrates power output means **71,72,73,75** for a wireless communication system.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Bock, McGeehan and Dent, thereby providing a means for recovering energy which would otherwise be lost to the communication system, see *column 1, lines 5-11 of the Dent reference*.

Regarding claims 11,25 and 36, in **figure 2**, McGeehan teaches that the transmission/reception means includes a transmission antenna **2** and a reception antenna **1** separated by a distance from said transmission antenna.

Regarding claims 12,26 and 37, in **figure 3**, McGeehan teaches that a common antenna **20** may be utilized for receiving and transmitting signals, thereby reading on "transmission/reception means further includes: a single antenna", while in **column 4, lines 54-57**, Boch teaches utilizing dual orthogonal polarization, which reads on "having

Art Unit: 2646

a dual polarization capability for transmitting information with a first polarization, and for receiving information with a second polarization.”

Regarding claims 86 and 87, in **figure 2**, the receiver **1** of McGeehan inherently teaches demodulating means, while that signals which is received by antenna **1** is interpreted as reading on “data input means”, and circuit elements **13-15, 19,17 and 16** are broadly interpreted as reading on “data processing means”, as broadly claimed.

Regarding claim 92, in **figure 2**, the transmitter **2** of McGeehan inherently teaches modulating means, reading on “modulating information for transmission as a modulated signal”; while **figure 6** of Dent teaches splitting a signal **via 71** from data processing means (*where inputs 1-N are interpreted as the output signals of a “data processing” means*), into said plural, parallel amplification channels **72**.

Regarding claim 98, in **figure 6** of Dent teaches a transceiver including: plural, parallel amplification channels **72**.

Regarding claim 99, **figure 6** of Dent teaches at least one coupler **71**, for splitting a signal from said data processing means(*where inputs 1-N are interpreted as the output signals of a “data processing” means,*) into said plural, parallel amplification channels **72**.

Regarding claim 101, in **figure 6**, Dent teaches at least one device **73** for combining outputs of each of said plural, parallel amplification channels **72** into a single output channel **1**.

4. Claims **84,85,95,96,103 and 104** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Boch (US 6,445,926)** in view of **McGeehan (US 6,229,992)** and further in view of **Dent (US 5,574,967)**, as applied to claims 11,25 and 36 above, and further in view of **Fenter (US 4,459,651)**.

Regarding claims 84,95 and 103, the combined prior art Boch, McGeehan and Dent, does not clearly teach regulator means for providing a regulated DC output voltage to said performing means.

Shown in **figure 2**, Fenter teaches a regulator means **161 & 300**, having at least one voltage regulator **161** for providing a regulated DC output voltage to said performing means. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of the cited art references and Fenter, for the purpose of minimizing power consumption and maximizing energy transfer, see *column 2, lines 10-14 in the Fenter reference*.

Regarding claims 85,96 and 104, shown in **figure 2**, and discussed in **column 8, lines 43-65**, Fenter teaches at least two DC voltage outputs, *to unit 240 and to circuit arrangement comprising diodes 202 & 212*; and means for inhibiting a first of said two DC voltage outputs, *namely, that output to unit 240*, when a second of said two DC voltage outputs is above a predetermined threshold.

5. **Claim 89** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Boch (US 6,445,926)** in view of **McGeehan (US 6,229,992)**, in view of **Dent (US 5,724,666)**, as applied to claim 87, and further in view of **Bhame (US 5,911,117)**.

Regarding claim 89, the combination of Boch, McGeehan and Dent, does not clearly teach a hermetically sealed housing.

Shown in **figure 3**, and discussed in **column 9, lines 12-17**, and **column 13, lines 37-43**, Bhame teaches transceiver components **31**, as well as *radio equipment* for sending and receiving radio signals, reading on “modulating means and said demodulating means”; Bhame further teaches that said transceiver components, and radio equipment is enclosed within housing **33**, reading on “hermitically sealed housing”. It would have been obvious for one of ordinary skill in the art at the time of the invention combine the teachings of Boch, McGeehan, Dent and Bhame, thereby providing a protective housing for the radio communication components, as is well understood in the art.

6. Claims **76-79,81-83,88,91,93 and 97** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Boch (US 6,445,926)** in view of **McGeehan (US 6,229,992)** in view of **Dent (US 5,574,967)**, as applied to claims 11,25 and 36 above, and further in view of **Dent (US 6,157,811)**.

Regarding claims 76,77,90,91 and 97, the combination of Boch and McGeehan, and Dent '967, does not clearly teach that said data input means is configured to receive data modulated on an intermediate frequency of 2-3 GHz, and includes a local oscillator for modulating said data with a frequency on the order of 18 GHz.

In **column 12, lines 49-54**, Dent '811 teaches generating a signal modulated at 2-3 GHz and later mixing the signal with a 18 GHZ local oscillator. Therefore, It would

be obvious for one of ordinary skill in the art at the time of the invention to modulate data on an intermediate frequency of 2-3 GHz, and to include a local oscillator for modulating data with a frequency on the order of 18 GHz, thereby maintaining coherent beam signal transport, see *column 3, lines 7-11*, as well as *column 7, line 65 – column 8, line 3 of the Dent '811 reference*.

Regarding claim 78, **in figure 6**, Dent '967 teaches power output means further includes: plural, parallel amplification channels **72**.

Regarding claim 79, **in figure 6**, Dent '967 teaches that said power output means further includes: at least one coupler **71**, for splitting a signal (see *inputs 1-N*) from said data processing means into said plural, parallel amplification channels **72**.

Regarding claim 81, **in figure 6**, Dent '967 teaches that said power output means further includes: at least one device **73** for combining outputs from each of said plural, parallel amplification channels **72** into a single output channel **1**.

Regarding claim 82, **in column 20, lines 34-36**, Dent '967 teaches at least one coupler is a 90 degree hybrid.

Regarding claim 83, **in figure 6**, Dent '967 teaches that said power output means further includes: at least one device **73** for combining outputs from each of said plural, parallel amplification channels **72** into a single output channel **1**.

Regarding claim 88, Dent '811 teaches a Local oscillator for supplying a modulating signal to said modulating means; while Boch inherently teaches providing a demodulating signal to said demodulating means, as is well understood as existing in receiving elements in transceiver devices.

7. Claims **80, 93, 94, 101 and 102** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Boch (US 6,445,926)** in view of **McGeehan (US 6,229,992)** in view of **Dent (US 5,574,967)**, as applied to claims 11,25 and 36 above, and further in view of **Leroux (US 5,745,009)**.

Regarding claims 80,93,100, **in figure 6**, Dent '967 teaches that dependent upon the number of inputs "N", the modulated information signal is split into four separate amplification channels (*see multiple pair-wise combiners 73*). Dent '967 does not clearly teach that the four separate amplification channels produce a 0.5 W output in each channel.

In **column 2, lines 43-55**, Leroux teaches an amplifier circuit for a telecommunications device, which produces a powerful output, typically 0.5W. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of the prior art, and Leroux, for the purpose of applying a positive supply voltage without parasitic current peaks, *see column 2, lines 52-54 of the Leroux reference*.

Regarding claim 94, **in figure 6**, Dent '967 teaches that said power output means further includes: at least one device **73** for combining outputs from each of said plural, parallel amplification channels **72** into a single output channel **1**.

Regarding claim 102, **in column 20, lines 34-36**, Dent '967 teaches at least one coupler is a 90 degree hybrid.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

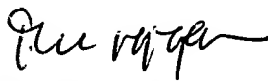
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne N Harvey whose telephone number is 571-272-7497. The examiner can normally be reached on 9-5:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2646

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


-Dionne Harvey


DUC NGUYEN
PRIMARY EXAMINER